APPENDIX L

Archaeological Report & Recommendations

Stone Ridge Club Archaeological Report and Recommendations.

By Tom E. Roll, Ph.D.
Archaeologist

June, 2009

This report details the results of my archaeological reconnaissance of the proposed Stone Ridge Club development property, located approximately 3.5 miles (5.5 km) west of McAllister, Montana on South Meadow Creek Road (Figure 1). As of this writing, the project is in a relatively early planning stage. Plans call for the development of 26 building lots ranging in size between 2.569 and 3.0 acres (Figure 2). Twenty-four of the lot sites are located in the south 2/3 of the SE ¼ S 26, T. 4 S., R. 2. W. Two lot sites are located on the eastern edge of the NE ¼ S 35, T. 4 S., R. 2 W. In addition to the residential development, a clubhouse and tennis courts are planned near the south center of the S 26 SE ¼ and a horse stable and horse pasture on the north portion of S 36. Present plans call for the demolition of five existing abandoned and badly deteriorated structures consisting of a house and four outbuildings. From a total land area of 201.452 acres 67.394 acres are dedicated to individual parcels; the remainder of 134.058 is dedicated to the club. Within the 2.5 to 3.0 acre areas of individual parcels, a substantially smaller portion is assigned to the building envelope for that parcel.

The proposed development lies about one-half mile west of the confluence of Leonard Creek with South Meadow Creek. Three geological mapping units define the development area.(Kellogg, Ruleman, Vuke 2007). A large ridge of archean metamorphic rocks defines the northern two thirds of the SE ¼ of S 26. The ridge crest trends from WSW to NNE and decreases in elevation toward the east. Quaternary alluvium and loess occupy a small triangle in the SE corner of S 26 and lower lying areas on both banks of South Meadow Creek. Undivided gravel deposits of Pleistocene age constitute the majority of the property located in the NW ¼ of S 35. Mapped soils have developed in accordance with parent material and topographic setting (See Figure 3, and Appendix I): Nuley-Rock outcrop complex on the ridge of Archean metamorphic rocks, Varney Clay loam on the small triangle of Quaternary alluvium and loess in the SE corner of S 26 and NE corner of S 35, and Beaverell cobbly loam on the gravel deposits south of South Meadow Creek in the NE ¼ of S 35. Both the Nuley-Rock outcrop complex and the Beaverell cobbly loam are shallow soils of very limited development. (http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx Sec. 26 T4S, R2W NRCS Web Soil Survey for Madison County, Montana, Stone Ridge Club Area, June 17, 2009) (Figure 3). Somewhat greater soil profile development characterizes the Varney clay loam soils but they are still relatively shallow soils with most development in the top five inches (13 cm). The chances of finding deeply buried cultural deposits in any of the contexts within the development boundaries are extremely remote. As an example, in the Nuley-Rock outcrop complex, lithic bedrock forms a restrictive feature at 10 to 20 inches (25.5 - 51 cm) from surface. A typical profile for the Beaverell cobbly loam exhibits a very gravelly clay loam at 4 to 17 inches (10-43 cm) below surface.

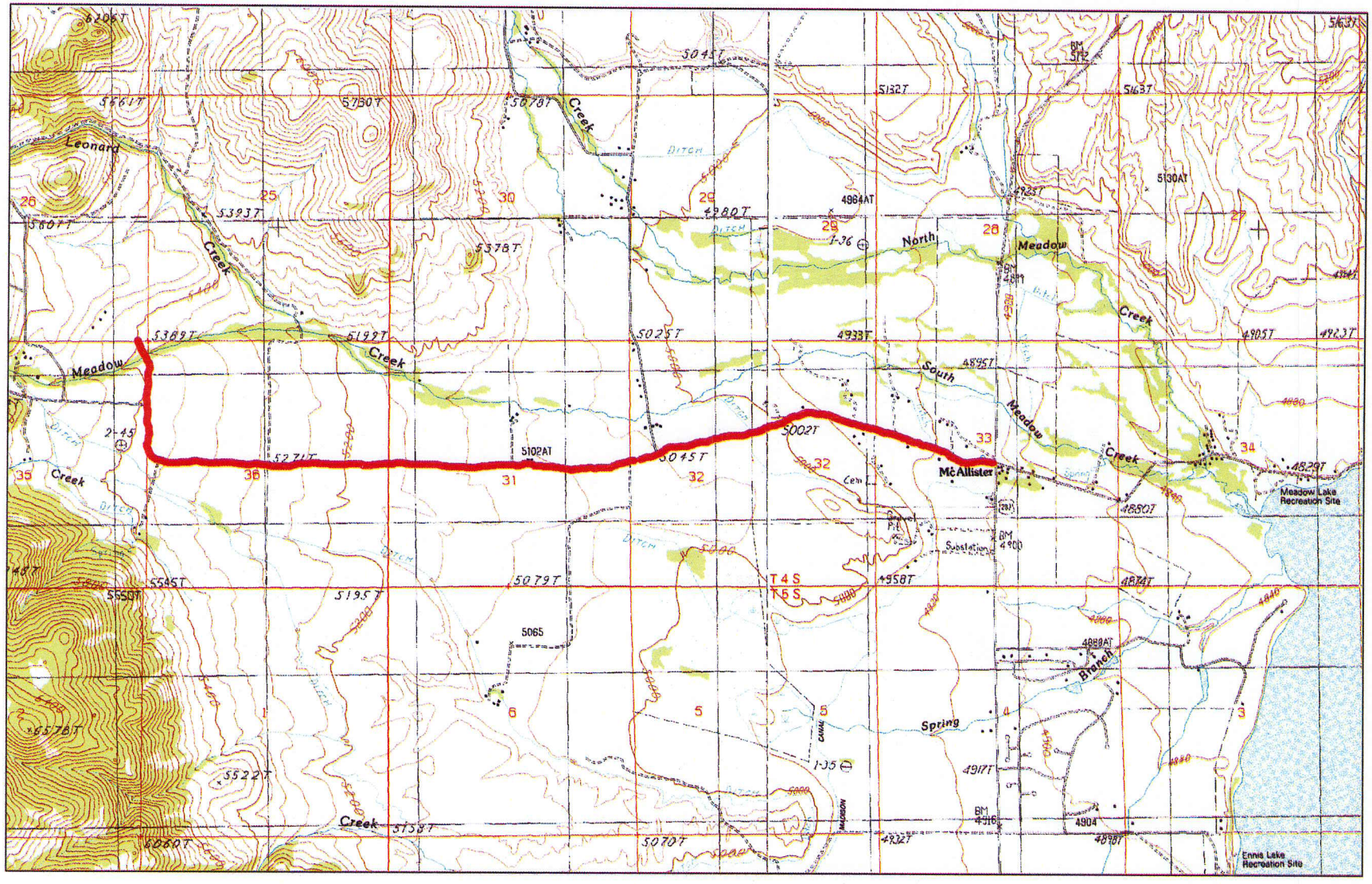


Figure 1. Route from McAllister, Montana to Proposed Stone Ridge Club location.

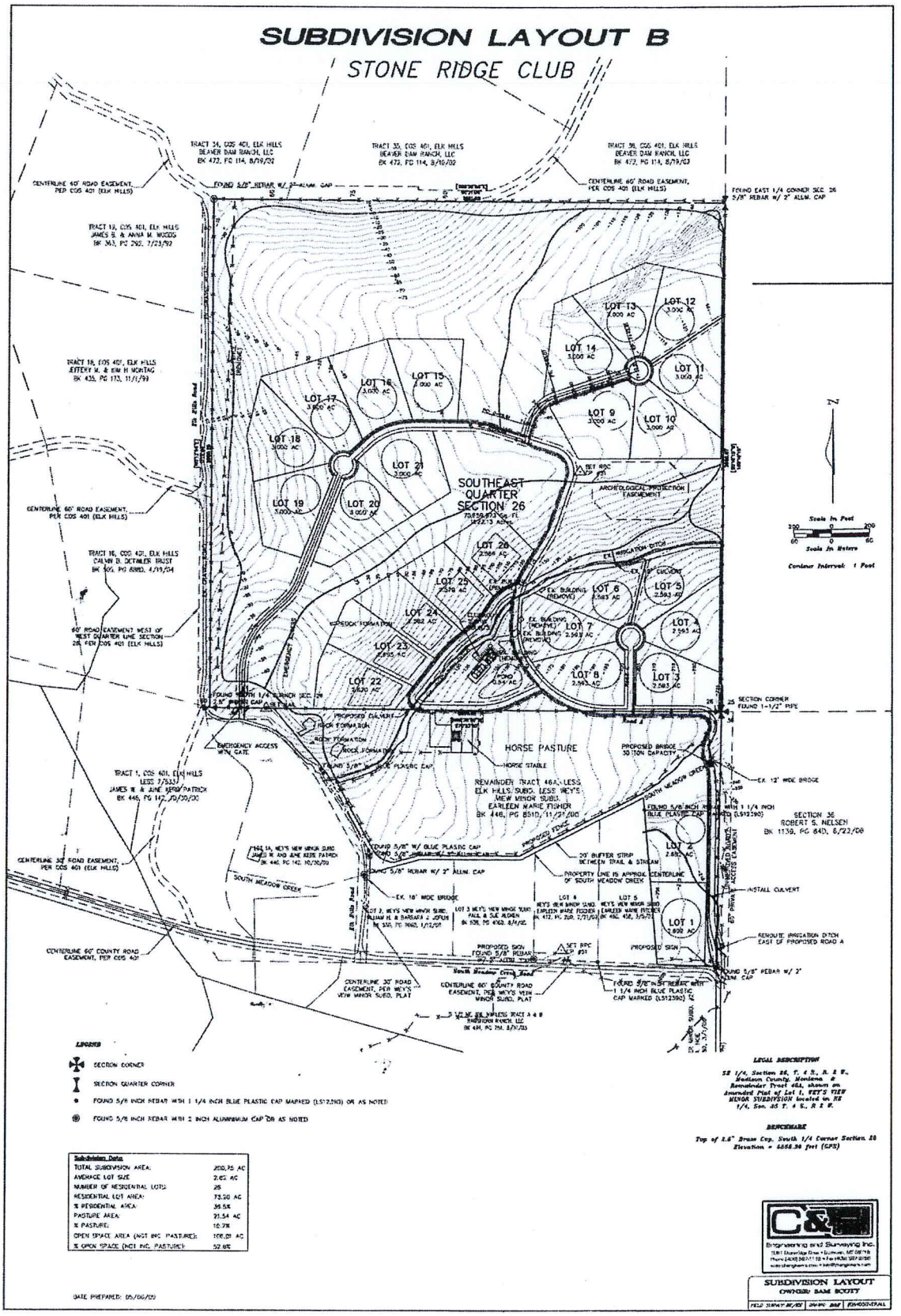


Figure 2. Plan view of proposed Stone Ridge Club layout.

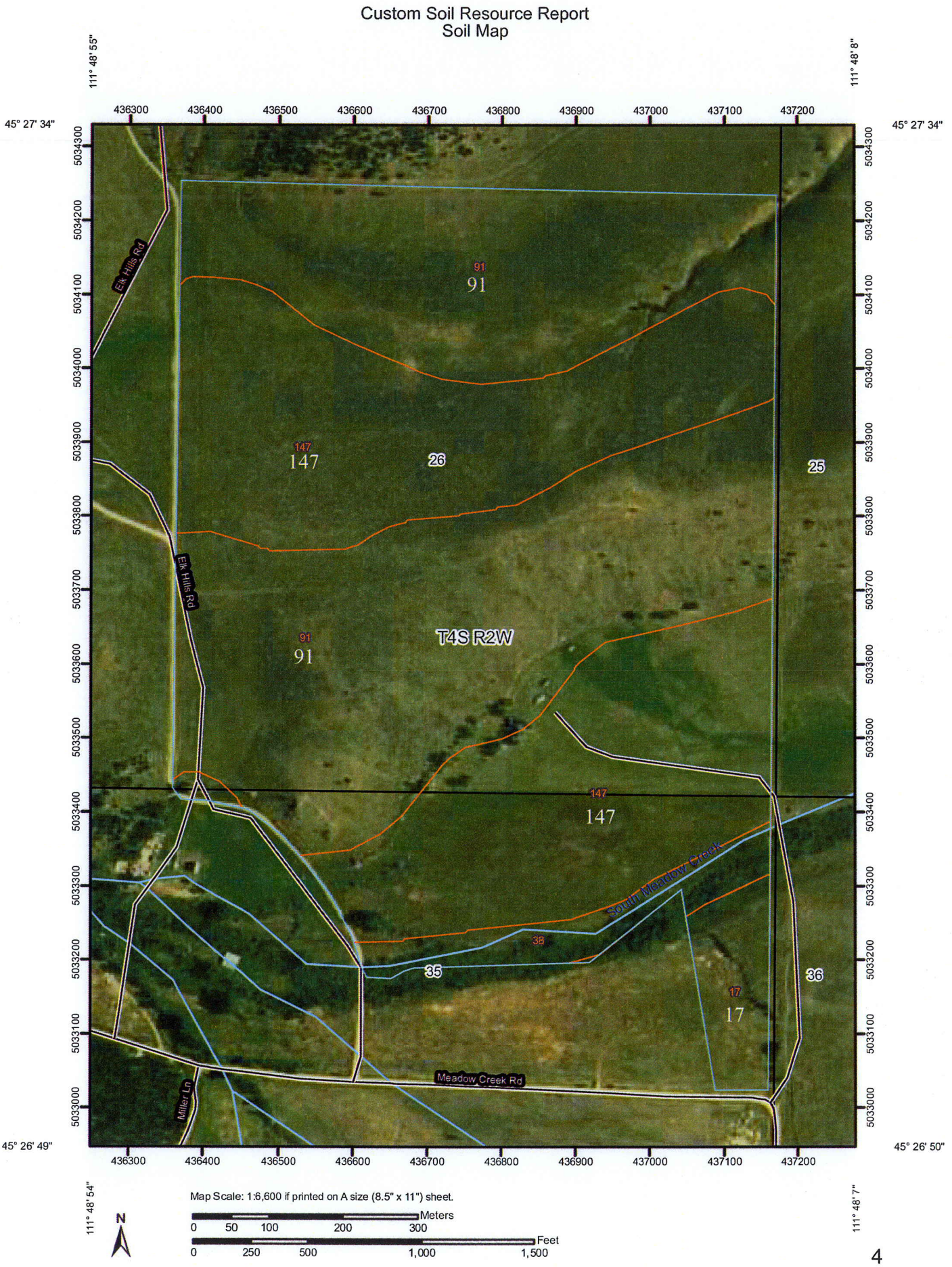


Figure 3. Custom Soil Map of proposed Stone Ridge Club development.

I visited the location with David R. Grigsby, of DRG Architects, on May 15, 2009 to evaluate the cultural resources present on the property. Over most of the site, at the time of our visit vegetation conditions were nearly ideal for viewing the surface for exposed cultural materials. The grasses were greening up and a small herd of cattle (~20 head) had grazed much of the ridge and field on the south side of the quarter section. Heavy sage brush growth to the north of the ridge crest made observation of the ground surface difficult, but sufficient clear patches existed to gain an impression of possible surface cultural materials. The reconnaissance identified three cultural resource sites (See Figure 4). Upon arriving at the property we began by conducting a pedestrian survey beginning near the ridge crest about 220 yd. (200 m) north of the SE corner of S 26. Almost immediately I observed the presence of flaking debris composed almost exclusively of dacite, a dark gray to black fine-grained igneous rock suitable for stone tool manufacture. The nearby Chapman dacite quarry (24MA1618) (Baumler and others 2001) located about 1.5 miles (2.4 km) northeast is the probable source. Scattered debris and occasional artifacts appeared along the south facing slope of the ridge for a distance of about 220 yd. (200 m). The remains of what appears to have been a small cache of bifaces and flakes was found about 110 yd. (100 m) east of the starting point on the boundary between sections 25 and 26 and some 55 yd (50 m) south of the ridge crest.. I collected a single large, well-thinned dacite biface (L 20.5 cm X W 11.8 cm X T 1.8 cm) (8.0" X 4.6" X 0.7") from the cache and left the remainder of the materials, mostly dacite bifaces broken during manufacture, and both dacite and cryptocrystalline flakes in place. I designated this cultural resource site as SRC-P1 and prepared a Montana Cultural Resources Information System (CRIS) form for submission to the University of Montana for assignment of a Smithsonian Institution archaeological site number. (See Appendix II). From my examination of this site, it appears unlikely that buried cultural materials are likely to be found. Bedrock outcrops exist along the ridge crest and scattered at lower elevations on the south face. Most of the surface sediment consists of decomposed bedrock with limited aeolian deposition and no indication of Holocene age alluvial deposits.

Prominent alterations to the existing landscape derive from the homestead era. The most obvious disturbances relate to agricultural activities. These were mostly confined to the SE corner of the SE ¼ S 26 and the northern portion of the NE ¼ S 35. An irrigation ditch divides the grazing land to the north from the more southerly crop lands immediately north of South Meadow Creek . Rock lines along existing and abandoned fence lines attest to the arduous exercise of field clearing. Five wooden structures represent the remains of a historic farmstead in the southwest corner of the SE¼ SE¼ of S 26. They form a linear cluster lying south of the irrigation ditch and roughly parallel. Building #1, the most southwesterly, is a house, approximately 22 x 40 ft. (6.7 X 12.2 m), with stone rubble foundation, clapboard siding over stick frame with a 12 x 20 ft. (3.7 X 6.1 m) section composed of sided-over log. This may be the remains of the original homestead cabin. The house is the only building that has some square nails, which are located in the log portion. The rest of this and the other buildings have

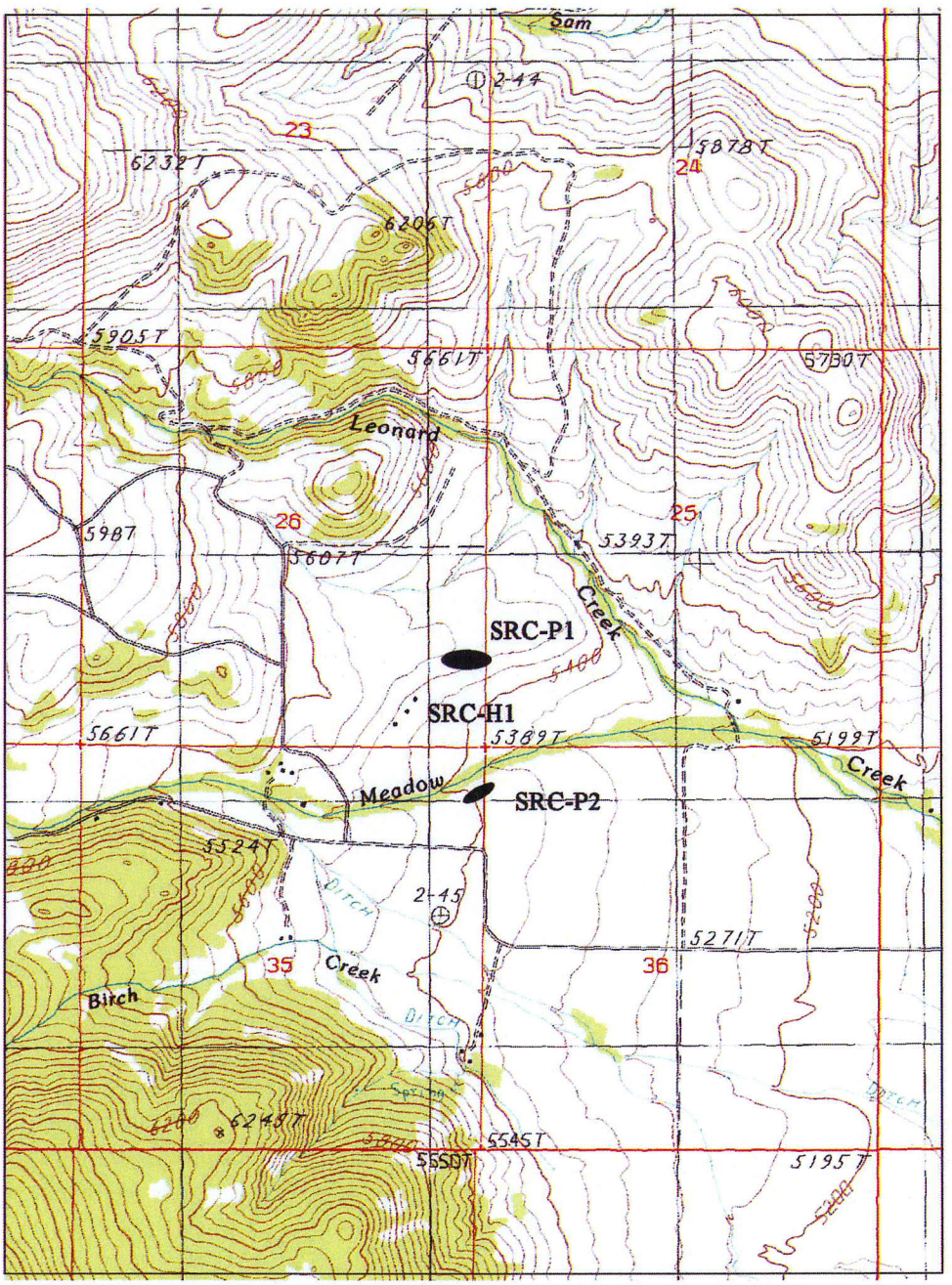


Figure 4. Location of cultural resource sites identiied in the proposed Stone Ridge Club Development, SE 1/4 S 26 and NE 1/4 S 35 T4S R2W (Leonard Creek 1:24,000 quadrangle).

exposed round head nails. To the NNE, Building # 2 was a Chicken Coop about 20 x 30 ft. (6.1 X 9.1 m), stick framed, dirt floor, some chicken-wired openings. Building #3 was a hay barn. It is about 18 x 22 ft. (5.5 x 6.7 m), log walled with stick framed roof and gables. It has a low hay loft area about 5 ft. (1.5 m) off the dirt floor area below. Building #4 appears to be a hog shed about 8 x16 ft. (2.4 X 4.9 m), lower half log, upper half stick framed, and a dirt floor. Building #5 was an exterior stick framed granary on a monolithic concrete floor, about 14 x 30 ft. (4.3 X 9.1 m).

American Land and Title Co. of Ennis, MT conducted a title search on this property. Their title search revealed 12 owners between 1984 and the present (See Table 1). A web search for original homestead information on the property produced information that disagrees with that yielded by the title search. The title search lists the acquisition date of the property by Soloman M. Bronner as 1894; the Madison County land records search listed the patent date as August 20, 1892 (Table 2). Homesteaders had to pay filing fees totaling $14 to $16 (eastern vs. western properties) and did not receive a patent on their property until they had "proved up" on the property by moving onto it within six months of filing, by residing on the property and making certain improvements for five years. Within seven years of initial filling the homesteader had to validate his claim to the land by having two witnesses attest to the validity of his claim and paying proving up fees that ranged from $4 to $6 depending on location (Dick 1970: 139). Exceptions to that provision of the Homestead Act of 1862 existed but were rarely employed. A homesteader with the necessary financial resource might elect to pay for the land at a predetermined price per acre. Given these considerations, unless the homestead records contain an error, it is possible that Bronner occupied the land as early as 1886 and almost certainly by 1888, but no later than 1892 when his patent was granted.

The name Soloman M. Bronner does not appear to be particularly prominent among important historic figures in the Madison Valley. I have been unable to find any other references to him in historic literature or in the burial and cemetery records for Madison County. It is possible that some of the buildings on the property date to the original homestead. The most likely original building is the house, whose framed sections appear to have emerged from a previously constructed log cabin. All of the buildings are dilapidated and have received various modifications over the years. I designated this cultural resource site as SRC-H1 and prepared a Montana Cultural Resources Information System (CRIS) form for submission to the University of Montana for assignment of a Smithsonian Institution archaeological site number. (See Appendix III). Given their remote location, condition, extent of modification, and lack of affiliation with a prominent historic individual they appear to be of limited historic value. Your plans call for razing these buildings and I doubt you will encounter any serious objections.

On a low bench south of South Meadow Creek in the NE¼ S 35 along the eastern boundary with S 36 a diffuse (approx. 1 item per 9 sq. ft or 0.84 sq. m) scatter of relatively small (< .25 sq in. or 1.6 sq. cm) dacite flakes is distributed over an area of about 100 x 150 ft. (22.8 X 45.7 m). We observed no chronologically diagnostic

specimens during our visit. This same scatter extends across the section line into S 36 but the extent is unknown. Geologically the scatter is situated on moderately sorted, moderately rounded to well-rounded, poorly bedded sand and gravel of Pleistocene age. I designated this cultural resource site as SRC-P2 and prepared a Montana Cultural Resources Information System (CRIS) form for submission to the University of Montana for assignment of a Smithsonian Institution archaeological site number. (See Appendix IV). There is no indication of recent alluvial deposition, which suggests little chance of subsurface cultural deposits.

Table 1. Title search results for landownership SE1/4 S26, T4S R2W,

Landowner(s)	Acquired	Transferred
Bronner, Soloman M. & Jane	1894[1]	1918
Beeler, Joseph & Minnie	1918	1927
Glade, George & Rose	1927	1928
Bausch, Harry	1928	1940
Bausch, Martha	1940	1945
Cain, Harold & Isla	1945	1946
Glarscock, H. O. & Gertrude	1946	1947
Little, George & Madge	1947	1951
Robert, Alex & Rubie	1951	1962
Liggett, Merle, Regna, & William S.,III & Rodie, Constance	Feb. 1962	May 1962
Nelson, Robert & Geraldine	May 1962	2006
Scott, Sam & Sherry	2006	Present

Table 2. Abbreviated data from Soloman M. Bronner homestead record

NAME	BRONNER, SOLOMAN M.
MERIDIAN	20
TWP	004 S
RANGE	002 W
SECTION	26
ACERAGE	160
TYPE	251101 (Homestead)
CASETYPE	PA (Patent)
DOCID	807
DATE	08/20/1892

Your plans specify part of the area of the lithic scatter as Lot 2, a building site with the housing envelope extending into the area of the lithics. Considering the diffuse nature of the cultural materials and the remote likelihood of buried deposits I see little reason not to use the location as planned.

I commend you for your willingness to have the property assessed for cultural resources and to set aside a substantial archaeological protection easement. Given the nature of the resources I have identified I believe you have met your responsibility to protection/preservation of Montana's cultural resources within the confines of the proposed Stone Ridge Club.

[1] At http://www.mtgenweb.org/ path is "Archives" – "Madison County" – "Land Records - B" then scroll down to Brunner, Soloman. Final url is http://files.usgwarchives.org/mt/madison/land/b.txt. This file lists August 20, 1892 as the date of Soloman M. Brunner's patent. This discrepancy in the chronology of ownership begs several contradictory explanations. Brunner either paid off the homestead claim in advance, initially filed claim for the property in 1888, or there is a mistake in the records.

References Cited

Baumler, Mark. F., Cora G. Helm, Steve Platt, Patrick Rennie and Stan Wilmoth
2001 Assault on Basalt: The Cashman Quarry Site, Madison County, Southwestern Montana. *Archaeology in Montana* 42(2):1-42.

Dick, Everett
1970 *The Lure of the Land: A Social History of the Public Lands from the Articles of Confederation to the New Deal.* University of Nebraska Press, Lincoln.

Kellogg, K. S., Ruleman. Chester A., and Susan. M. Vuke
2007 *Geologic Map of the Central Madison Valley (Ennis Area) Southwestern Montana*. MBMG Open File Report 543, 1:50,000. Montana Bureau of Mines and Geology, Butte.

APPENDIX I

Custom Soil Survey for Madison County

Stone Ridge Club Property

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Madison County Area, Montana

Stone Ridge Club Property

June 24, 2009

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://soils.usda.gov/sqi/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://soils.usda.gov/contact/state_offices/).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

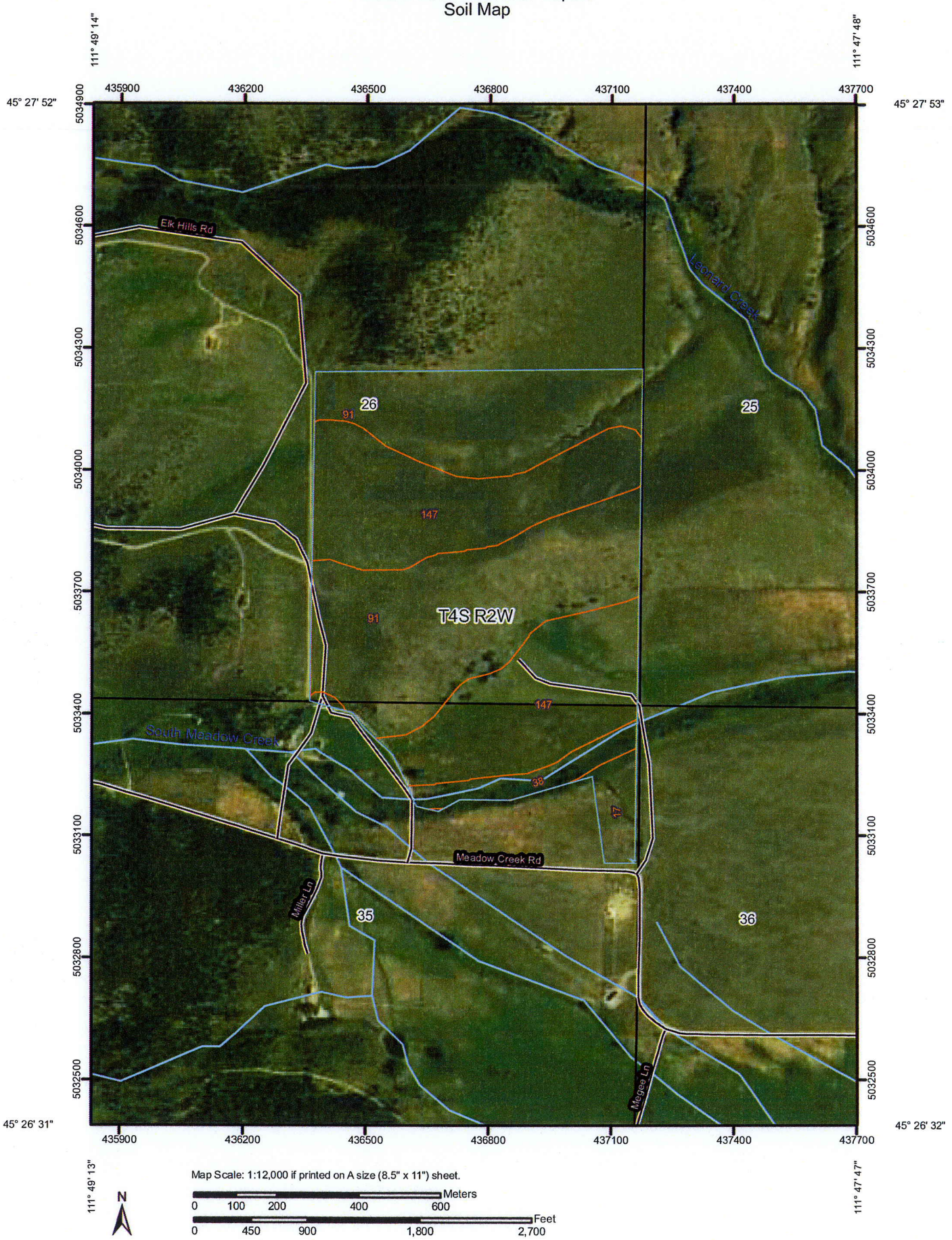
Information about soils is updated periodically. Updated information is available through the NRCS Soil Data Mart Web site or the NRCS Web Soil Survey. The Soil Data Mart is the data storage site for the official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.


111° 49' 14"
111° 47' 48"
45° 27' 52"
45° 27' 53"
435900
436200
436500
436800
437100
437400
437700
5034900
5034600
5034300
5034000
5033700
5033400
5033100
5032800
5032500
Elk Hills Rd
Leonard Creek
South Meadow Creek
Meadow Creek Rd
Miller Ln
Mcgee Ln
26
25
35
36
T4S R2W
91
147
38
17
45° 26' 31"
45° 26' 32"
111° 49' 13"
111° 47' 47"
Map Scale: 1:12,000 if printed on A size (8.5" x 11") sheet.
N
Meters
0 100 200 400 600
Feet
0 450 900 1,800 2,700

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

Special Line Features
- Gully
- Short Steep Slope
- Other

Political Features
- Cities
- PLSS Township and Range
- PLSS Section

Water Features
- Oceans
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:12,000 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 12N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Madison County Area, Montana
Survey Area Data: Version 11, Feb 26, 2008

Date(s) aerial images were photographed: 8/5/2005

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Madison County Area, Montana (MT636)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
17	Beaverell cobbly loam, cool, 0 to 6 percent slopes	6.3	3.1%
38	Cryaquolls, nearly level	7.4	3.7%
91	Nuley-Rock outcrop complex, 8 to 35 percent slopes	103.3	51.5%
147	Varney clay loam, 2 to 8 percent slopes	83.7	41.7%
Totals for Area of Interest		**200.7**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments

on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Madison County Area, Montana

17—Beaverell cobbly loam, cool, 0 to 6 percent slopes

Map Unit Setting

Elevation: 2,400 to 6,500 feet
Mean annual precipitation: 10 to 16 inches
Mean annual air temperature: 37 to 45 degrees F
Frost-free period: 80 to 130 days

Map Unit Composition

Beaverell and similar soils: 90 percent
Minor components: 10 percent

Description of Beaverell

Setting

Landform: Drainageways on terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Gravelly alluvium

Properties and qualities

Slope: 0 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: Very low (about 2.9 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability (nonirrigated): 6s
Ecological site: Shallow to Gravel (SwGr) 9-14" p.z. (R044XS338MT)

Typical profile

0 to 4 inches: Cobbly loam
4 to 17 inches: Very gravelly clay loam
17 to 60 inches: Stratified very gravelly loamy sand

Minor Components

Beaverell, stony

Percent of map unit: 4 percent
Landform: Drainageways on terraces
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Shallow to Gravel (SwGr) 9-14" p.z. (R044XS338MT)

Trimad

Percent of map unit: 3 percent

Landform: Drainageways on stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Silty (Si) 9-14" p.z. (R044XS339MT)

Rivra

Percent of map unit: 3 percent
Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Shallow to Gravel (SwGr) 9-14" p.z. (R044XS338MT)

38—Cryaquolls, nearly level

Map Unit Composition

Cryaquolls and similar soils: 95 percent
Minor components: 5 percent

Description of Cryaquolls

Setting

Landform: Swales, drainageways, flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Gravelly alluvium

Properties and qualities

Slope: 0 to 4 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Depth to water table: About 6 to 30 inches
Frequency of flooding: Rare
Frequency of ponding: None

Interpretive groups

Land capability (nonirrigated): 5w

Minor Components

Nonhydric

Percent of map unit: 5 percent

91—Nuley-Rock outcrop complex, 8 to 35 percent slopes

Map Unit Setting

Elevation: 4,300 to 6,500 feet
Mean annual precipitation: 10 to 14 inches

Mean annual air temperature: 37 to 45 degrees F
Frost-free period: 90 to 115 days

Map Unit Composition
Nuley and similar soils: 65 percent
Rock outcrop: 20 percent
Rentsac and similar soils: 10 percent
Minor components: 5 percent

Description of Nuley

Setting
Landform: Hills, structural benches
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy residuum weathered from gneiss

Properties and qualities
Slope: 8 to 35 percent
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: Low (about 3.6 inches)

Interpretive groups
Land capability (nonirrigated): 6e
Ecological site: Sandy (Sy) 9-14" p.z. (R044XS335MT)

Typical profile
0 to 4 inches: Sandy loam
4 to 11 inches: Sandy clay loam
11 to 24 inches: Gravelly sandy loam
24 to 42 inches: Gravelly coarse sand
42 to 46 inches: Unweathered bedrock

Description of Rock Outcrop

Interpretive groups
Land capability (nonirrigated): 8

Description of Rentsac

Setting
Landform: Hills, ridges
Landform position (two-dimensional): Shoulder, backslope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Residuum weathered from calcareous sandstone

Properties and qualities
Slope: 8 to 25 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock

Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 4.0 mmhos/cm)
Available water capacity: Very low (about 1.5 inches)

Interpretive groups

Land capability (nonirrigated): 7e
Ecological site: Shallow Limy (SwLy) 9-14" p.z. (R044XS612MT)

Typical profile

0 to 4 inches: Channery loam
4 to 16 inches: Very channery loam
16 to 20 inches: Unweathered bedrock

Minor Components

Nuley, thick surface

Percent of map unit: 5 percent
Landform: Hills, structural benches
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Sandy (Sy) 9-14" p.z. (R044XS335MT)

147—Varney clay loam, 2 to 8 percent slopes

Map Unit Setting

Elevation: 4,300 to 6,500 feet
Mean annual precipitation: 10 to 14 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 90 to 105 days

Map Unit Composition

Varney and similar soils: 90 percent
Minor components: 10 percent

Description of Varney

Setting

Landform: Alluvial fans, hills, stream terraces
Landform position (two-dimensional): Footslope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Fine-loamy alluvium

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: Moderate (about 7.4 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability (nonirrigated): 3e
Ecological site: Silty (Si) 9-14" p.z. (R044XS339MT)

Typical profile

0 to 5 inches: Clay loam
5 to 16 inches: Gravelly clay loam
16 to 48 inches: Gravelly sandy clay loam
48 to 60 inches: Stratified gravelly loamy sand to loam

Minor Components

Varney, cobbly loam

Percent of map unit: 7 percent
Landform: Alluvial fans, hills, stream terraces
Landform position (two-dimensional): Footslope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Silty (Si) 9-14" p.z. (R044XS339MT)

Rock outcrop

Percent of map unit: 3 percent

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://soils.usda.gov/

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://soils.usda.gov/

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://soils.usda.gov/

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://soils.usda.gov/

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.glti.nrcs.usda.gov/

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://soils.usda.gov/

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://soils.usda.gov/

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210.

APPENDIX II

MONTANA CULTURAL RESOURCES INFORMATION SYSTEM FORM

for

Cultural Resource Site SRC-P1

1. IDENTIFICATION

*required to receive Smithsonian number

1.1 Smithsonian Number: **1.2 Field Designation:** SRC_P1

1.3 Project Name: Stone Ridge Club development

1.4 Agency Project Number: N. A. **1.5 Consultant Project Number:** SRC

2. LOCATION

***2.1 Township:**4 **Range:**2 **Section:**26 **¼ Section(s):** NE, SE,

***2.2 County:** Madison

***2.3 UTM Coordinates:** Zone E 437149m; N 5033526m

***Datum used:** NAD 27 conus

***2.4 Administrative/Surface Ownership:** (Agency/Region/District/Office) Private

***2.5 7.5' USGS Map Name, Date:** Leonard Creek, Montana 1997

2.6 Narrative of access: From McAllister, MT drive west on South Meadow Creek Road. Approx 3 mi. from McAllister road turns right (N) for 1/8 mi. Road then turns left (W). At corner proceed N along fence line to S 26 corner. Proceed north on foot along fence line for 350 m.

2.7 City/Town: McAllister, MT **Vicinity of:** North of Ennis, Montana, west of Ennis Lake.

3. DESCRIPTION

***3.1 Site Category** (choose one)**:** Prehistoric Historic Paleontological Combination Other

***3.2 Site Type** (see recommended site type list, choose all that apply)**:** Lithic workshop

3.3 Narrative Description of Site: Site appears to consist of a lithic manufacturing area utilizing dacite from the Cashman Quarry (24MA1618) a short distance to the NW. Lithic debris consists mostly dacite, but during my visit I identified one piece of obsidian and several chert flakes.. Most of the materials appear on a south facing slope a short distance below the ridge crest and on the leeward (SE) side of large boulders, as though the knappers were trying to avoid the prevailing winds that blow from the WNW. There is no indication of substantial sediment deposition in the area of the lithic debris and most soil appears to derive from degraded rock from the ridge itself.

3.4 Site Dimensions: Approximately 200 m E-W by 50 m N-S.
Surface visibility: Low surface visibility.

3.5 Feature Descriptions: Other than a possible small biface cache, I observed nothing that I would consider to be a related surface feature of cultural origin.

3.6 Artifacts: (✓ all that apply) Chipped Stone Wood Ground Stone Ceramics Bone Trade Other
Description: Observed artifacts consisted of one complete and four partial bifaces and numerous small dacite flakes, one obsidian flake, and three large chert flakes.

3.7 Diagnostic Artifacts: No culturally or chronologically diagnostic artifacts were found.

3.8 Subsurface Testing: None

3.9 Site function/interpretation: lithic reduction/manufacturing location.

4. PERIOD

4.1 Apparent Time Period of Site (use dropdowns)**:**
Prehistoric ? **Historic** **Paleontological**

5. ENVIRONMENTAL SETTING

5.1 Geographic Setting: South side of divide (ridge crest) between Leonard Creek and South Meadow Creek. 300m north of South Meadow Creek. 10 miles W of Madison River.	
5.2 Contour: Known Approximate Unknown	**5.3 Elevation:** 5480 a.m.s.l.
5.4 View/Aspect (estimated direction and distance): South 15 miles, East to crest of Madison range, west 10 miles to crest of Tobacco Roots.	
5.5 Sediments: Sandy loam Soils classified as Nuley-Rock ourcrop complex. Loamy residuum weathered from gneiss . **Deposition:** Surface Only Buried Only Surface and Buried Redeposited Other	
5.6 Available Water Sources (use dropdown):	
5.7 Major River Drainage (name, distance, elevation): Madison River 10 miles 4900	
5.8 Minor Drainage (name, distance, elevation): South Meadow Creek 300 m 5400	
5.9 Local Vegetation: Wheatgrass, Idaho fescue, sage, cottonwood.	**Regional Vegetation:** Dry steppe

6. ASSESSMENT, RECORDING & MANAGEMENT

6.1 Significance: Principal significance resides in the proximity to the Cashman Quarry, a major lithic resource acquisition area of southwestern Montana.	
6.2 Condition/Integrity: Modification by agricultural practices and domestic cattle have undoubtedly impacted the integrity of artifact locations.	
6.3 Possible impacts to site: The developers of the Stone Ridge Club intend to set aside the area of cultural resource site SRC-P1 as an archaeological protection easement.	
6.4 Evaluation: Does this property meet National Register criteria for eligibility? Yes No Unevaluated **Evaluation Procedures/Justification:** Examination of the site area reveals limited soil depth and development. Artifacts appear to have been mostly transported or disturbed by various agencies. No evidence of cultural or chronological relationship is to be expected.	
6.5 Recording status: surface examination photo map subsurface tested	
6.6 Recommendations (use dropdown): **Comments:** Nature of sediment deposition appears to preclude the possibility of buried deposits.	
6.7 Site Located by: Tom E. Roll	**Date Located:** 5/15/09
6.8 Site Recorded by: Tom E. Roll	**Date Recorded:** 6/2/09
6.9 Site form update and revisions by:	**Date updated:**
6.10 Federal/State Permit No: None	
6.11 Publication(s)/Report(s) where site is described: None	
6.12 Artifact Repository: Department of Sociology and Anthropology, Montana State Univ.	
6.13 Field notes/maps/photos repository: all notes/maps/photographs attached to this form.	
6.14 Photographs: As accompany this form.	
***6.15 Map: Attach a sketch map (if applicable) and photocopy of 7.5' Quad showing site location.**	

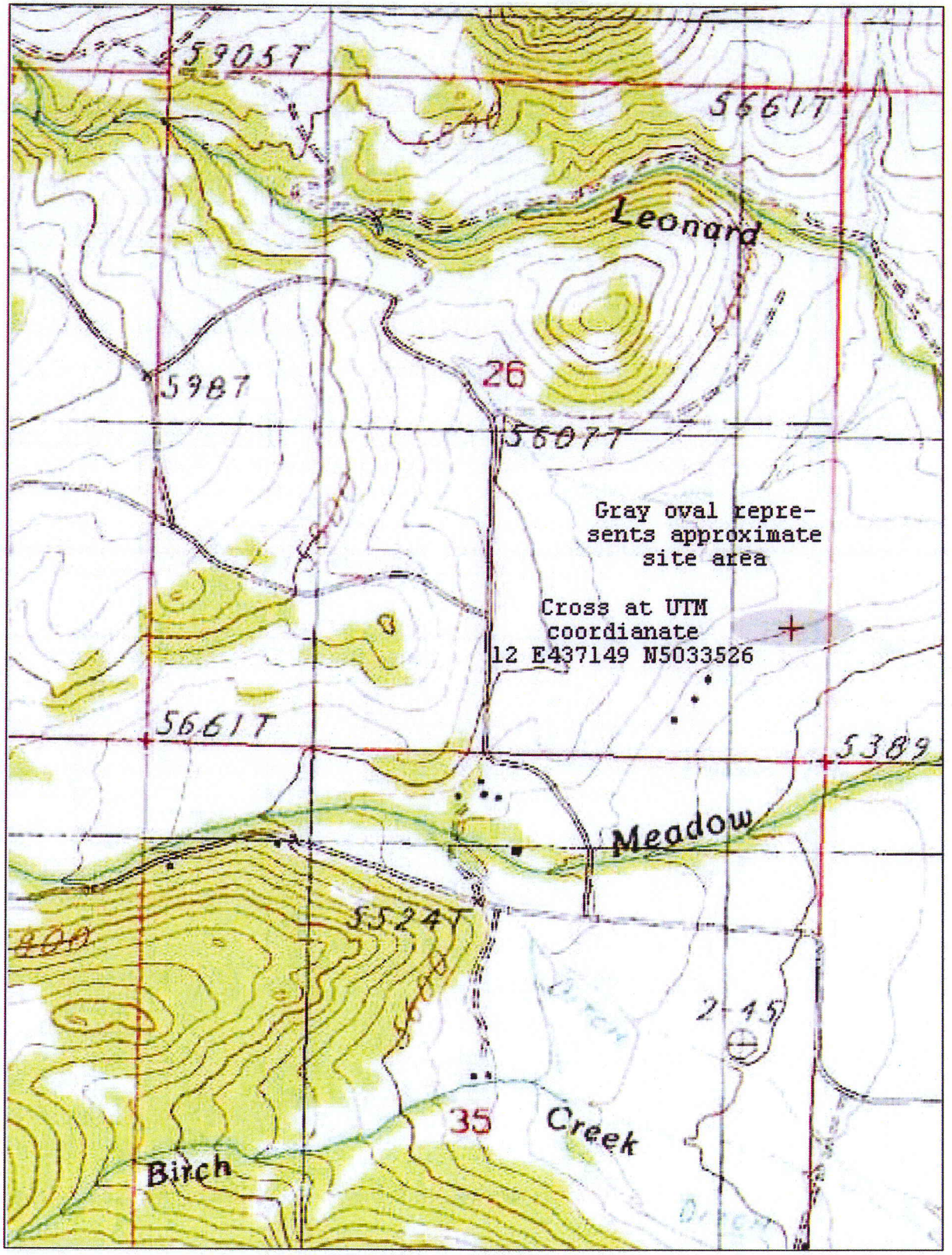


FIGURE II - 1. SRC prehistoric site 1 indicated by shaded oval. Cross near center of oval indicates UTM coordinate: Zone 12, E437149 N533526, location of biface cache (?).

Figure II - 2. Dave Grigsby observing lithic cache (?).

Figure II - 3. Close up of Dacite Biface and biface fragments in cache (?

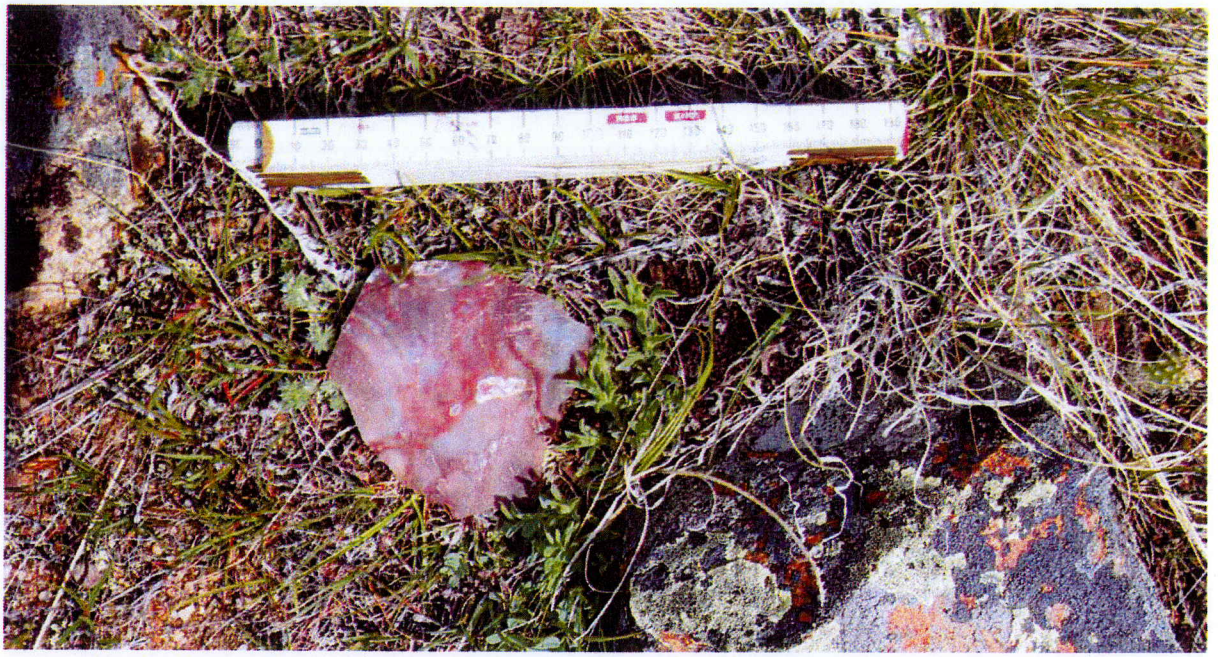


Figure II - 4. Large chert flake associated with dacite bifaces in lithic cache (?).

Figure II - 5. Dacite flakes found on southeast side of large quartzite outcrop near S26, S25 boundary south of ridge crest.

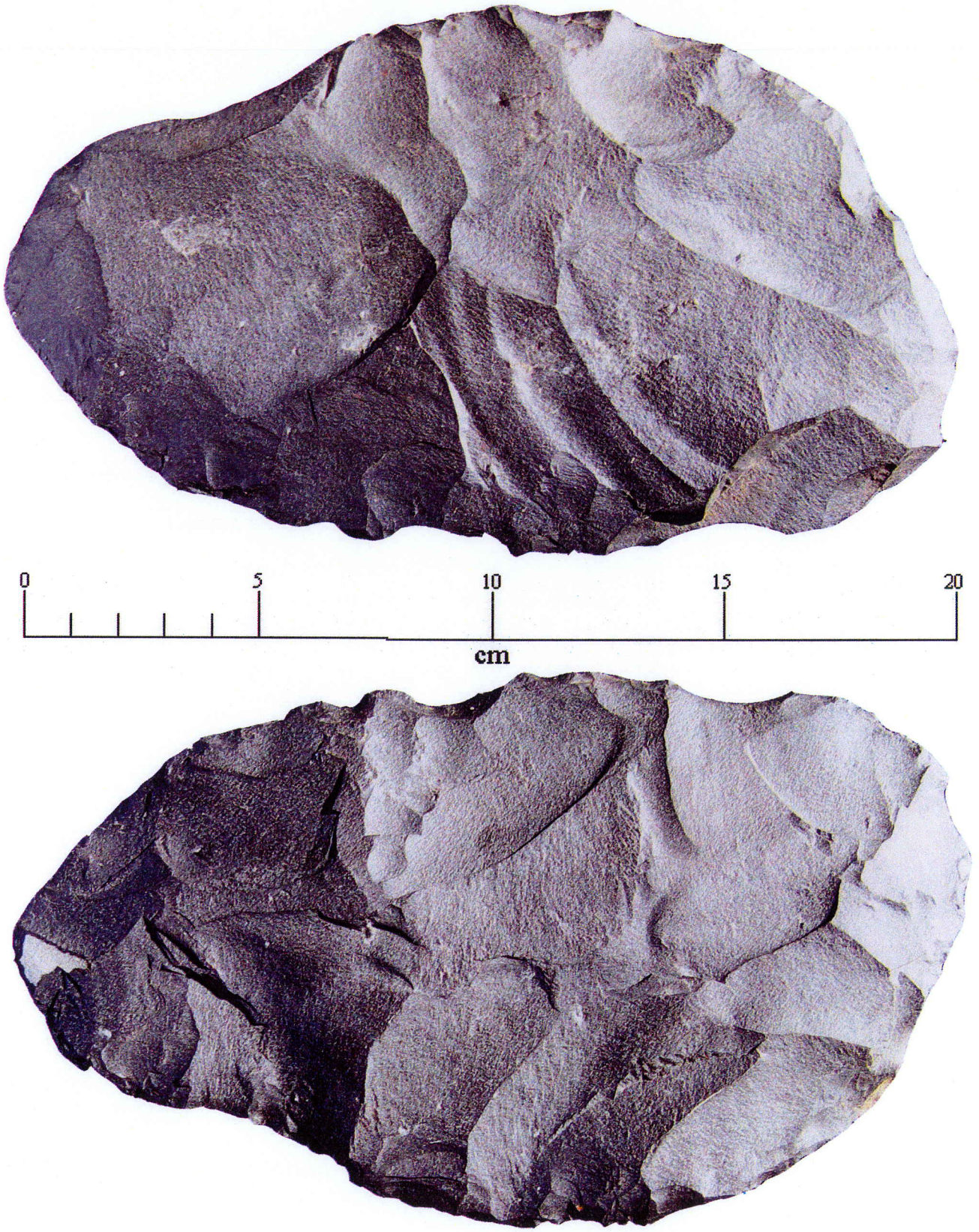


Figure II - 6. View of both faces of dacite biface found at SRC-P1

APPENDIX III

MONTANA CULTURAL RESOURCES INFORMATION SYSTEM FORM

for

Cultural Resource Site SRC-H1

1. IDENTIFICATION

*required to receive Smithsonian number

1.1 Smithsonian Number: **1.2 Field Designation:** SRC-H1

1.3 Project Name: Stone Ridge Club development

1.4 Agency Project Number: **1.5 Consultant Project Number:** SRC

2. LOCATION

***2.1 Township:**4 **Range:**2 **Section:**26 **¼ Section(s):** SE,
,

***2.2 County:** Madison

***2.3 UTM Coordinates:** Zone E 436864 m; N 5033303m
(UTM for House)

***Datum used:** NAD 27 conus

***2.4 Administrative/Surface Ownership:** (Agency/Region/District/Office) Private

***2.5 7.5' USGS Map Name, Date:** Leonard Creek, MT, 1997

2.6 Narrative of access: From McAllister, MT drive west on Lower Meadow Creek Road. Approximately 3 miles from McAllister road turns north for 1/8 mile then west. At corner drive directly north to S 26 SE corner.

2.7 City/Town: McAllister, MT **Vicinity of:** Ennis, MT, Ennis Lake.

3. DESCRIPTION

***3.1 Site Category** (choose one): Prehistoric Historic Paleontological Combination Other

***3.2 Site Type** (see recommended site type list, choose all that apply): Historic Homestead/Farmstead, Historic Residence, Historic Agriculture, Historic Irrigation System.

3.3 Narrative Description of Site: A roughly triangular tilled field about 300 m N-S on the east and 400 m E-W on the south, bounded by an irrigation ditch forming the hypotenuse, contains a historic farmstead near the western apex of the triangle. Building #1, is a house, approximately 22'x40', with stone rubble foundation, clapboard siding over stick frame with one small portion sided over log (about 12'x 20', maybe original cabin). This is the only building that has some square nails located in the log portion. The rest of this and the other buildings have exposed round head nails. Building # 2, a Chicken Coop about 20'x30', stick framed, dirt floor, some chicken-wired openings. Building #3 was a Hay Barn. It is about 18'x22', log walled with stick framed roof and gables. It has a low hay loft area about 5' off the dirt floor area below. Building #4 appears to be a hog shed about 8'x16', lower half log, upper half stick framed, dirt floor. Building #5 was an exterior stick framed granary on a monolithic conc. floor, about 14'x30'.

3.4 Site Dimensions: Structures in a staggered line about 120 m WSW-ENE. Total area of field approx 18 acres

Surface visibility: Both structures and field readily visible.

3.5 Feature Descriptions:

3.6 Artifacts: (✓ all that apply) Chipped Stone Wood Ground Stone Ceramics Bone Trade Other
Description: Structures are of log and framed contruction. Historic debris asociatied with structures.

3.7 Diagnostic Artifacts: N.A. Square and round head nails.

3.8 Subsurface Testing: None

3.9 Site function/interpretation: Late 19th to mid 20th century agricultural residence and fields.

4. PERIOD

4.1 Apparent Time Period of Site (use dropdowns):
Prehistoric **Historic** 1890-1950(?) **Paleontological**

5. ENVIRONMENTAL SETTING

5.1 Geographic Setting: Immediately north of South Meadow creek, west of Madison River approx 10 miles.

5.2 Contour: Known Approximate Unknown

5.3 Elevation: 5600'

5.4 View/Aspect (estimated direction and distance): Tobacco Root Mountains 5 miles due west, Madison Range to the East approx 15 miles.

5.5 Sediments: Clay loam Soil classified as Varney clay loam. Parent material fine-loamy alluvium.
Deposition: Surface Only Buried Only Surface and Buried Redeposited Other

5.6 Available Water Sources (use dropdown):

5.7 Major River Drainage (name, distance, elevation): Madison approx. 10 miles 4900'

5.8 Minor Drainage (name, distance, elevation): South Meadow Creek 50 m 5400'

5.9 Local Vegetation: Wheatgrass, Idaho fescue, needle-and-thread grasses.

Regional Vegetation: Dry steppe

6. ASSESSMENT, RECORDING & MANAGEMENT

6.1 Significance: Questionable significance, property long abandoned, most recent use as cattle range.

6.2 Condition/Integrity: Structures are badly deteriorated. From appearance of construction details most of the structures probably post date 1900.

6.3 Possible impacts to site: If present development plans progress all of the structures will be demolished.

6.4 Evaluation: Does this property meet National Register criteria for eligibility? Yes No Unevaluated
Evaluation Procedures/Justification: The location of the property is remote from commonly traveled tourist routes. Earliest w landownership by Soloman M. Bronner who apparent homsteaded the parcel.

6.5 Recording status: surface examination photo map subsurface tested

6.6 Recommendations (use dropdown):
Comments: None

6.7 Site Located by: Tom E. Roll **Date Located:** May 15, 2009

6.8 Site Recorded by: Tom E. Roll **Date Recorded: June 1, 2009**

6.9 Site form update and revisions by: N. A. **Date updated: N.A.**

6.10 Federal/State Permit No: N.A.

6.11 Publication(s)/Report(s) where site is described: None

6.12 Artifact Repository: None collected

6.13 Field notes/maps/photos repository: See attachments and figures.

6.14 Photographs: See figures

***6.15 Map: Attach a sketch map (if applicable) and photocopy of 7.5' Quad showing site location.** See Attached.

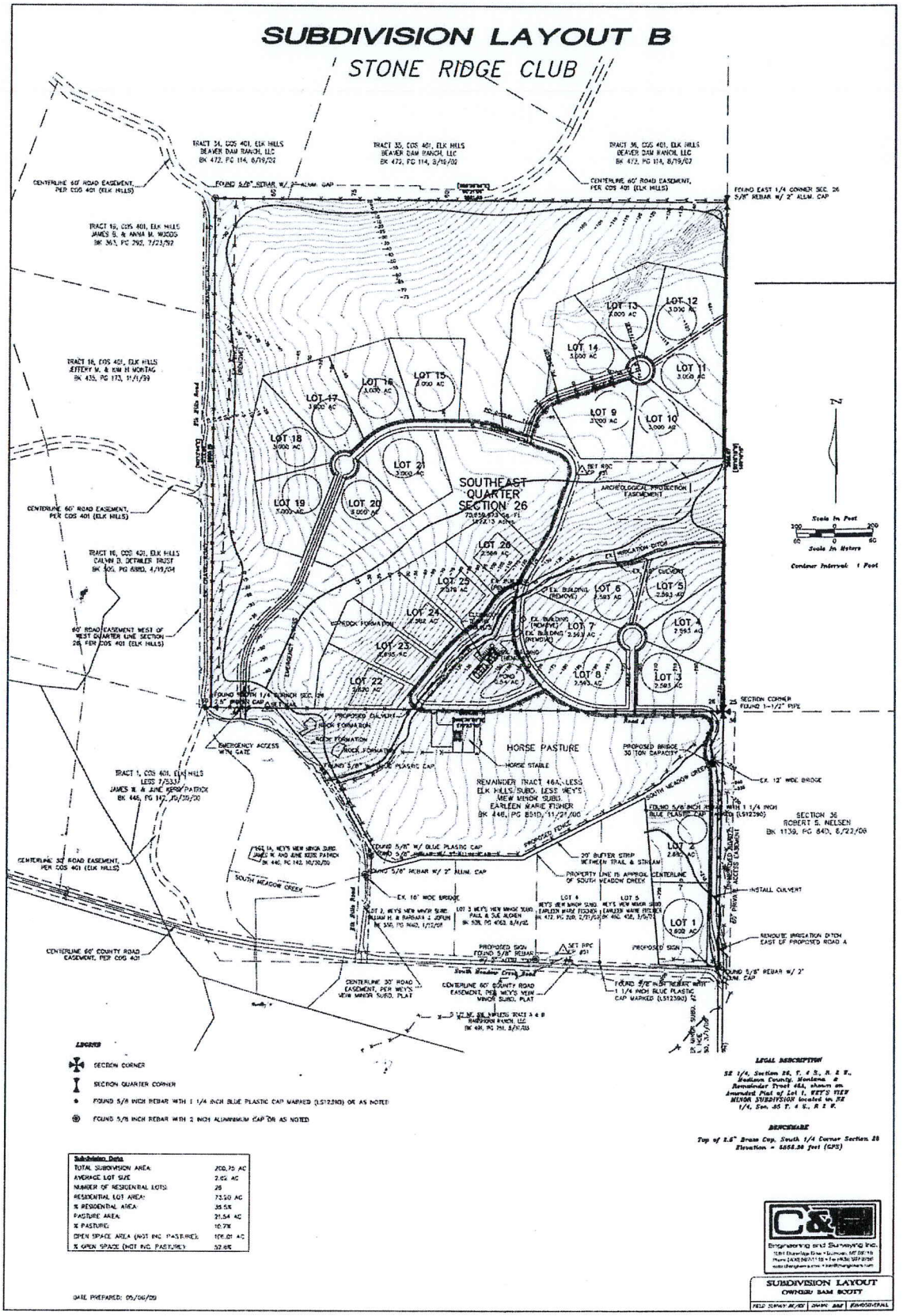


Figure III -1. Proposed Stone Ridge Club development plan, SE 1/4 S 26 and NE 1/4 S35, T4S R4E.

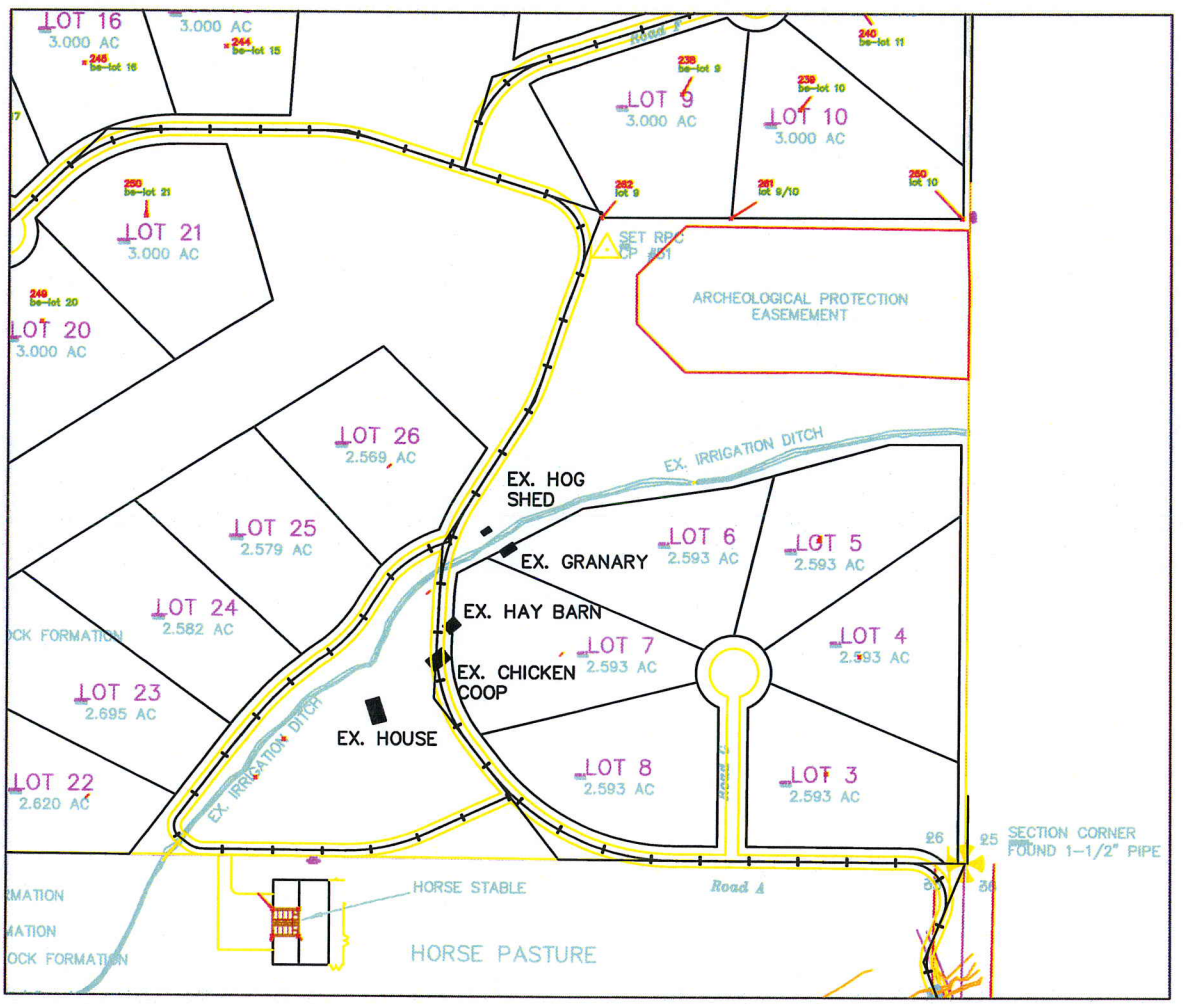


Figure III - 2. Plan view of existing structures scheduled for demolition within the proposed Stone Ridge Club Development.

Figure Iii- 3. Historic farmstead panoramic view, building # 1 to # 4 left to right (building 5 hidden behind building # 4) (Looking WNW).

Figure III - 4. Building # 1, house, east elevation.

Figure III - 5. Building #1 house, south elevation.

Figure III - 6. Building # 1, house interior.

Figure III - 7. Building #2, chicken coop, east elevation.

Figure III - 8. Building # 3, hay barn, east elevation.

Figure III - 9. Building # 4, hog shed (?), southeast elevation.

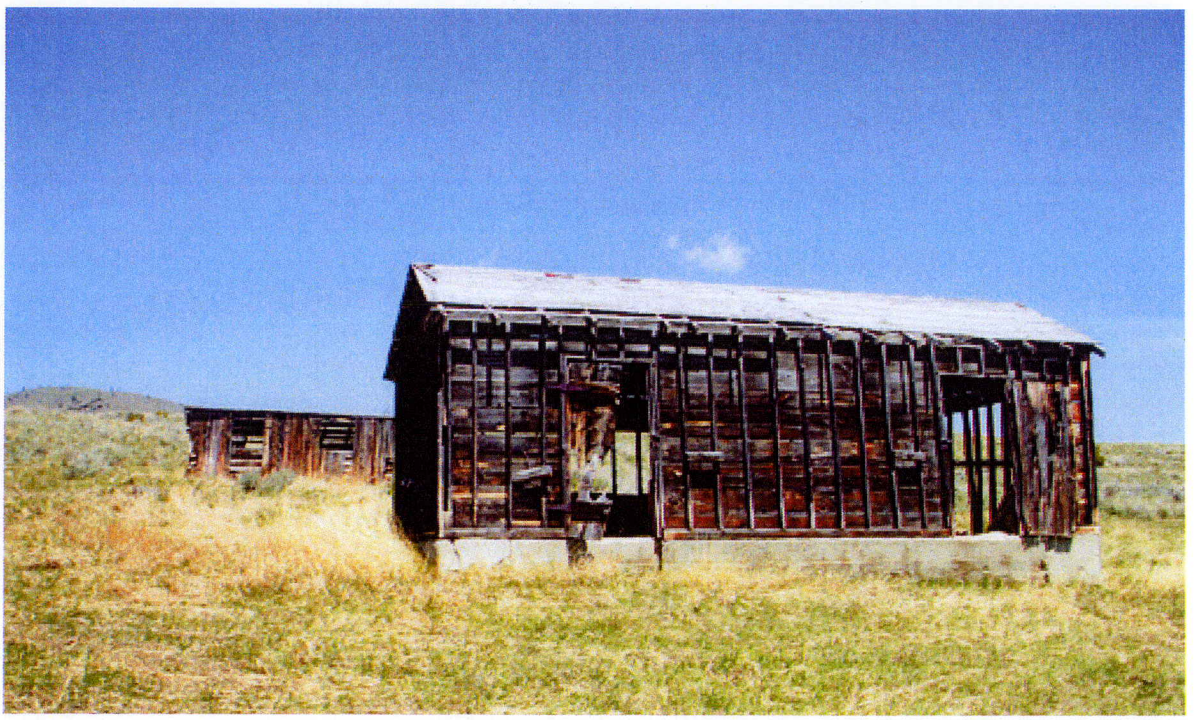


Figure III - 10. Building # 5, granary, south elevation
(note hog shed in left background).

APPENDIX IV

MONTANA CULTURAL RESOURCES INFORMATION SYSTEM FORM

for

Cultural Resource Site SRC-P2

1. IDENTIFICATION

*required to receive Smithsonian number

1.1 Smithsonian Number: **1.2 Field Designation:** SRC_P2

1.3 Project Name: Stone Ridge Club development

1.4 Agency Project Number: N.A. **1.5 Consultant Project Number:** SRC

2. LOCATION

***2.1 Township:**4 **Range:**2 **Section:**35 **¼ Section(s):** NW, NW,	***2.2 County:** Madison
***2.3 UTM Coordinates:** Zone E 437211m; N 5033043m UTM for approximate site center	***Datum used:** NAD 27 conus
***2.4 Administrative/Surface Ownership:** (Agency/Region/District/Office) Private	
***2.5 7.5' USGS Map Name, Date:** Leonard Creek, MT, 1997	
2.6 Narrative of access: From McAllister, MT drive west on South Meadow Creek Road. Approx 3 mi. from McAllister road turns right (N) for 1/8 mi. Road then turns left (W). At corner proceed N along fence line to edge of terrace overlooking right bank of South Meadow Creek.	
2.7 City/Town: McAllister, MT **Vicinity of:** North of Ennis, MT, west of Ennis Lake.	

3. DESCRIPTION

***3.1 Site Category** (choose one): Prehistoric Historic Paleontological Combination Other

***3.2 Site Type** (see recommended site type list, choose all that apply): Lithic Scatter

3.3 Narrative Description of Site: A diffuse (1 item per 0.84 sq. m.) surface scatter of relatively small (~ 1.6 sq. cm) dacite flakes. Geologically, the site is situated on moderately sorted, moderately rounded to well-rounded, poorly bedded sand and gravel of Pleistocene age. There is no indication of recent alluvial deposition which suggests little chance of subsurface cultural deposits.

3.4 Site Dimensions: 20 m X 50 m
Surface visibility: Low

3.5 Feature Descriptions: None observed

3.6 Artifacts: (✔ all that apply) Chipped Stone Wood Ground Stone Ceramics Bone Trade Other
Description: avg 1 x 1 cm dacite flakes

3.7 Diagnostic Artifacts: none identified

3.8 Subsurface Testing: None

3.9 Site function/interpretation: lithic scatter, tool preparation?

4. PERIOD

4.1 Apparent Time Period of Site (use dropdowns):
Prehistoric no temporal diagnostics **Historic** **Paleontological**

5. ENVIRONMENTAL SETTING

5.1 Geographic Setting: Outwash gravels paralleling South Meadow Creek drainage. Possible obscured terrace deposits.	
5.2 Contour: Known Approximate Unknown	**5.3 Elevation:** 5400 a.m.s.l.
5.4 View/Aspect (estimated direction and distance): S 15+ mi., E to crest Madison Range, W 10 mi. to crest Tobacco Roots.	
5.5 Sediments: Cobbly loam Soils classified as Beaverell cobbly loam. Parent material gravelly alluvium. **Deposition:** Surface Only Buried Only Surface and Buried Redeposited Other	
5.6 Available Water Sources (use dropdown):	
5.7 Major River Drainage (name, distance, elevation): Madison River 6 mi. 4900	
5.8 Minor Drainage (name, distance, elevation): South Meadow Creek **20 m 4380**	
5.9 Local Vegetation: Wheatgrass, Idaho fescue, needle-and-thread, sage.	**Regional Vegetation:** Dry Steppe

6. ASSESSMENT, RECORDING & MANAGEMENT

6.1 Significance: Limited to none	
6.2 Condition/Integrity: Prrobably disturbed, typical of diffuse lithic scatters.	
6.3 Possible impacts to site: Likely building site	
6.4 Evaluation: Does this property meet National Register criteria for eligibility? Yes No Unevaluated **Evaluation Procedures/Justification:** Diffuse lithic scatter on private land, no national significance.	
6.5 Recording status: surface examination photo map subsurface tested	
6.6 Recommendations (use dropdown): **Comments:**	
6.7 Site Located by: Tom E. Roll	**Date Located:** 5/15/09
6.8 Site Recorded by: Tom E. Roll	**Date Recorded:** 6/4/09
6.9 Site form update and revisions by:	**Date updated:**
6.10 Federal/State Permit No: None	
6.11 Publication(s)/Report(s) where site is described: None	
6.12 Artifact Repository: None collected	
6.13 Field notes/maps/photos repository: See attached figures	
6.14 Photographs: None	
***6.15 Map: Attach a sketch map (if applicable) and photocopy of 7.5' Quad showing site location.**	

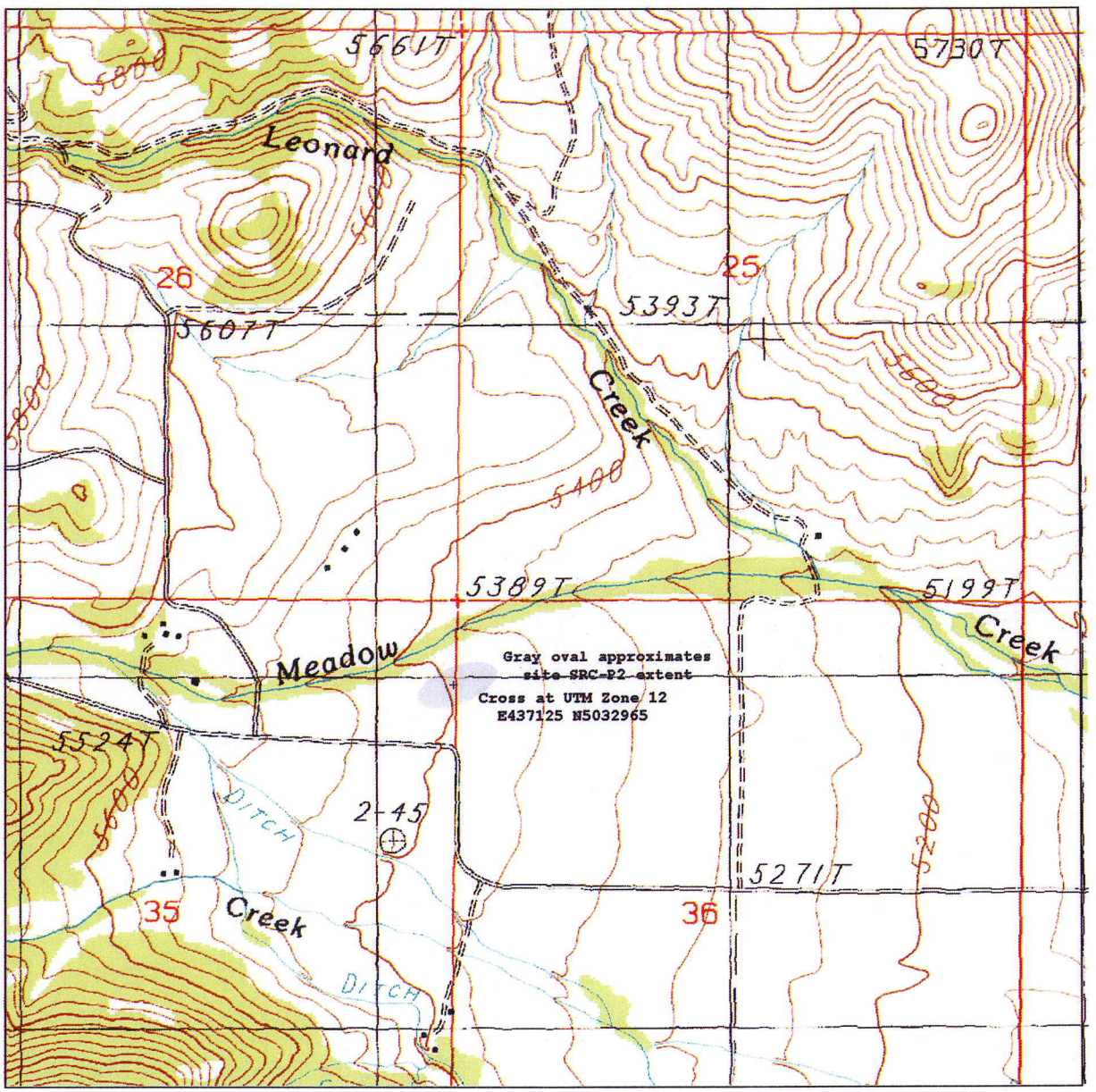


Figure IV - 1. Approximate location of site SRC-P2, lithic scatter indicated by gray ellipse. Cross near center of ellipse at UTM Zone 12, E437215 N5032965.